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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PHAN, THIEM D

ART UNIT

PAPER NUMBER

3729

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/540,653	<b>Applicant(s)</b> GUENSCHER ET AL.	
	<b>Examiner</b> THIEM PHAN	<b>Art Unit</b> 3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 15-19 and 21-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-19 and 21-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. The amendment filed on 06/23/08 has been fully considered and made of record.

### ***Specification***

2. On page 1, before "FIELD OF THE INVENTION", insert:

#### **"CROSS-REFERENCE TO RELATED APPLICATION**

This application is the National Phase Patent Application of International Application Number PCT/DE03/03800, filed on November 17, 2003, which claims priority to Germany Patent Application Number 102 60 852.0, filed December 23, 2002." See MPEP 608.01.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 15-19, 21 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shier (US 4,782,320).

**Regarding claims 15 and 19**, Shier teaches a method for selecting a resistance value in a network (Col. 2, lines 1-3), including the:

- adjusting of the electrical resistance to a specified value or resistor network value (Fig. 1, 10) at which the resistor run (Fig. 1, R1-R17) is produced so as to have a lower resistance with reference to the specified value (Col. 4, lines 40-43), wherein the resistor run

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includes burn-up segments (Fig. 1, any combination of R1-R17) and bridging meandering windings or meshes (Fig. 1, any combination of N1-N17), wherein the adjusting is undertaken by cutting open selected ones of the burn-up segments (Col. 4, lines 44-47); and

- cutting of the metal shorts of the resistive link by sending energy-controlled current pulses to the metal shorts (Col. 1, line 63) and the cutting of the burn-up segments by laser (Col. 3, lines 27-30; col. 1, line 63; col. 4, lines 44-47) through the burn-up segments; except for cutting/opening the burn-up segments by energy-controlled current pulses injected to circuit traces routed to selected burn-up segments.

It would be obvious to one of ordinary skill in the art at the time the invention was made to apply the cutting of the burn-up segments by electrical current pulses in addition to the laser network-trimming and heating in order to speed up the cutting process, since the burn-up segment can be metal links (R1 & R4 of zero Ohm value) shorting resistive links (R6 & R3 of some Ohms value) and these metal links are blown open with a current pulse (Col. 1, lines 60-63), which therefore requires interconnection to circuit traces to conduct current pulse to its target.

**Regarding claim 16**, Shier teaches that the burn-up segments are situated so that at least for a part of the meandering windings or meshes (Fig. 1, N1-N4-N5 of 16), one of the burn-up segments (Fig. 1, R1 & R4) is connected in parallel to each of the meandering windings.

**Regarding claim 17**, Shier teaches that one of the burn-up segments (Fig. 1, between N1 & N2) is connected to one of two connecting circuit traces (Fig. 1, N1) that are routed to two ends (Fig. 1, 14) of the resistor run; and for cutting open a selected burn-up segment, the selected

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burn-up segment is heated due to Joule effect and the current pulse (Col. 3, lines 27-30; col. 1, line 63) is injected into the connecting circuit traces of the resistor run.

**Regarding claim 18**, Shier teaches that at least one first burn-up segment (Fig. 1, R1 & R4) is connected to one of two connecting circuit traces (Fig. 1, N1 & N5) that are routed to two ends (Fig. 1, N1 & N4) of the resistor run and at least one last burn-up segment (Fig. 1, R1 & R4) is connected to an additional circuit trace (Fig. 1, N3), and for cutting open a selected burn-up segment, the selected burn-up segment is heated due to Joule effect by injecting the current pulse (Col. 3, lines 27-30; col. 1, line 63) and the current pulse is injected between the connecting circuit trace and the additional circuit.

**Regarding claim 21**, Shier teaches that the current for burning the resistor segments are of controlled pulse (Col. 3, lines 27-30; col. 1, line 63; col. 4, lines 44-47).

**Regarding claim 29**, Shier teaches a method for selecting a resistance value in a network (Col. 2, lines 1-3), including the:

- adjusting of the electrical resistance to a specified value or resistor network value (Fig. 1, 10) at which the resistor run (Fig. 1, R1-R17) is produced so as to have a lower resistance with reference to the specified value (Col. 4, lines 40-43), wherein the resistor run includes burn-up segments (Fig. 1, any combination of R1-R17) and bridging meandering windings or meshes (Fig. 1, any combination of N1-N17), wherein the adjusting is undertaken by cutting open selected ones of the burn-up segments (Col. 4, lines 44-47); and
- cutting of the metal shorts of the resistive link by sending energy-controlled current pulses to the metal shorts (Col. 1, line 63) and the cutting of the burn-up segments by

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laser (Col. 3, lines 27-30; col. 1, line 63; col. 4, lines 44-47) through the burn-up segments; except for cutting/opening the burn-up segments by energy-controlled current pulses injected to circuit traces routed to selected burn-up segments.

It would be obvious to one of ordinary skill in the art at the time the invention was made to apply the cutting of the burn-up segments by electrical current pulses in addition to the laser network-trimming and heating in order to speed up the cutting process, since the burn-up segment can be metal links (R1 & R4 of zero Ohm value) shorting resistive links (R6 & R3 of some Ohms value) and these metal links are heated up due to Joule effect then blown open by the current pulse (Col. 1, lines 60-63), where the specific resistance of the burn-up segment is increased as temperature rises.

5. Claims 22 and 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shier in view of Kato (US 5,844,122).

**Regarding claim 22**, Shier teaches a method for selecting a resistance value in a network including the teaching of the cutting by laser and electric current pulse (Col. 3, lines 27-30; col. 1, line 63; col. 4, lines 44-47), which reads on applicants' claimed invention; except for monitoring the voltage falling off at a selected burn-up segment when a more than proportional voltage increase is detected in order to switch off the current pulse.

Kato teaches the sensing of the current/voltage output across the resistor to be trimmed ((Fig. 3, 23 & 24; col. 3, lines 42-45).

It would be obvious to one of ordinary skill in the art at the time the invention was made to apply the voltage sensor, as taught by Kato to the method for selecting a resistance value in a

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network with the teaching obviousness of the combined cutting by laser and electric current pulse of the resistor in order to save energy by turning off the cutting by laser and electric current pulse, once the resistor is cut and it spikes the voltage output for sensing and recognition.

**Regarding claims 24-28,** Shier in view of Kato teach a method for selecting a resistance value in a network including the teaching of the cutting by laser and electric current pulse (Col. 3, lines 27-30; col. 1, line 63; col. 4, lines 44-47), which reads on applicants' claimed invention; except for having different structure of a resistor run such as the cutout on the cover layer, the cut off of connecting circuit traces ends region, the narrow size of the burn-up segments and their waist-shaped and the cavity in the cover layer of the resistor run.

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to have the structure of a resistor run such as the cutout on the cover layer, the cut off of connecting circuit traces ends region, the narrow size of the burn-up segments and their waist-shaped and the cavity in the cover layer of the resistor run because applicants have not disclose that the "structure of a resistor run such a the cutout on the cover layer, the cut off of connecting circuit traces ends region, the narrow size of the burn-up segments and their waist-shaped and the cavity in the cover layer of the resistor run" provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected applicant's invention to perform equally well with a structure for a resistor run of a sensor (Kato; Fig. 1) because it insulates the sensor resistor (Fig. 1, 2) while providing contacting pads (Fig. 1, 15 & 17) as well.

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Therefore, it would have been an obvious matter of design choice to modify Shier in view of Kato to obtain the invention as specified in Claims 24-28.

6. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shier in view of Moriyasu (US 3,639,785).

Shier teaches a method for selecting a resistance value in a network including the use/connection of current pulse to cut (Col. 1, line 63), which reads on applicants' claimed invention; except for using an electronic switch to connect the current pulse to the circuit traces.

Moriyasu teaches a pulse generator with current switches triggered (Fig. 1, 10, 12, 14 & 16; col. 1, lines 34-38, lines 60-66) to obtain desired pulse shaping with high switching rates at increased power output.

It would be obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Shier by applying the pulse generator with current switches triggered as current pulse connection, as taught by Moriyasu, in order to obtain desired pulse shaping with high switching rates at increased power output.

### ***Response to Arguments***

7. Applicants' arguments with respect to claims 15-19 and 21-29 have been considered but are moot in view of the new ground(s) of rejection.

Furthermore, in view of the recent Supreme Court's decision in the *KSR* case, 72 FR 57526. In the guidelines seven possible rationales are laid out for an obviousness rejection: "(A) Combining prior art elements according to known methods to yield predictable results; (B)



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Simple substitution of one known element for another to obtain predictable results; (C) Use of known technique to improve similar devices (methods, or products) in the same way; (D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results; (E) 'Obvious to try'--choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; (F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art; (G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention." *Id.* at 57529. The rejection of claims 15-19 and 21-29 under 103(a) is applied with respect to the above decision, especially with the last rationale.

With respect to remarks on pages 5-7, Shier teaches the selecting of a resistance value in a network (Col. 2, lines 1-3) and the cutting of the metal shorts of the resistive link by sending energy-controlled current pulses to the metal shorts (Col. 1, line 63) and the cutting of the burn-up segments by laser (Col. 3, lines 27-30; col. 1, line 63; col. 4, lines 44-47) through the burn-up segments. It would be obvious to one of ordinary skill in the art at the time the invention was made to apply the cutting of the burn-up segments by electrical current pulses in addition to the laser network-trimming and heating in order to speed up the cutting process, since the burn-up segment can be metal links (R1 & R4 of zero Ohm value) shorting resistive links (R6 & R3 of some Ohms value) and these metal links are blown open with a current pulse (Col. 1, lines 60-63), which therefore requires interconnection to circuit traces to conduct current pulse to its target.

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Claims 16-19 and 21-29 stand rejected as provided in sections 3-6 and with respect to the responses to the arguments above.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure.

Applicants' amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tim Phan whose telephone number is 571-272-4568. The examiner can normally be reached on M & Tu, 6AM - 2PM, and W & Th, 9AM – 5PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bryant can be reached on 571-272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Phan Thiem/  
Primary Examiner, Art Unit 3729

December 3, 2008